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WEEKLY STATION REPORTS

OF THE DIVISION OF

DRY LAND AGRICULTURE

BUREAU OF PLANT INDUSTRY

U. S. DEPARTMENT OF AGRICULTURE

46148

MAR 1941

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REPORT FOR THE MONTH OF MARCH, 1941.

HAVRE:

The mean temperature for the month was 3.3° above the normal for the station; below zero was reported on only one day. Wind movement was below the average. Precipitation totaled only 0.29 inch. Precipitation for January, February, and March is 0.50 inch below the 1917-40 average.

Field work was begun on March 27. Fall plowing was disked and spring plowing was started. It appears at the present time that winter wheat has made very good survival, especially in the rotations and farm fields. Some of the varieties do not look so well. Crested wheatgrass has an average growth of about 2-1/2 inches.

The fourth winter feeding period ended on the 27th. The calves made an average daily gain of 1.25 pounds on a ration of alfalfa alone. The cow herd was also weighed, showing a gain of around 69 pounds during the winter. Twelve calves have been dropped so far.

The W.P.A. crew continued working on the renovation of the office. The N.Y.A. boys also continued with the renovation of the bunkhouse and station guest rooms.

Maximum temperature, 64°; minimum -5°; precipitation, 0.29 inch; snowfall, 3.3 inches.

JUDITH BASIN:

The precipitation for the three months January-March is 0.52 inch. This is the lowest in a 46-year record. The previous low was 0.66 inch in 1921.

January, February, and March were all below their respective monthly averages. Compared with the 32-year station average for these three months the averages this year is 1.41 inches below normal. Despite this moisture deficiency, winter-sown crops, as yet, appear to be in surprisingly good condition, although weeds are beginning to germinate freely and may become a damaging factor.

The winter pasture and feeding experiment with 32 steer calves which began on November 19 was concluded on March 19 at the end of 120 days on test. Data are being assembled, and this information should prove valuable to all livestock men in Montana who have crested wheatgrass. Officials of the Montana Experiment Station hope to present this information in circular form at an early date.

Maximum temperature, 62°; minimum, 0°; precipitation, 0.25 inch.

HUNTLEY:

Although the mean temperature for March was above the average, many days throughout the period were raw and chilly as a result of wind and dampness. Fog, light rains, and snows at frequent intervals kept the humidity high. Precipitation occurred on 17 days during the month, but on only 5 days were measurable amounts received.

Fall-sown grains and crested wheatgrass are starting nicely. The grain on fallow appears to have survived the winter with excellent stands and has a good color. Wheat on other seedbeds has not all come up yet, and the emerged plants look weak.

A small amount of field work was done in March between storm periods. Some crested wheatgrass was drilled in the south pasture early in the month, and plowing for spring grains has been completed in the rotations. At the close of the month conditions were favorable for continuing seedbed tillage and that work is well along.

Maximum temperature, 65°; minimum, -1°; precipitation, 0.45 inch; average, 0.89 inch.

SHERIDAN:

The month was mild and pleasant, with no precipitation of consequence. The mean temperature was about 2° above the average, precipitation was about 1/3 the average for the month, and wind movement was slightly below the average.

Russian thistles were cleared from the rotation field the week of the 21st, and field work has been general through this section for the past few days. Spring plowing in the rotations for small grain and flax was completed yesterday, grasses were sown, and seeding of bulk fields and cultivation of the rotation field is now in progress.

Lambing was completed about the middle of the month with about a 140 percent lamb crop from the ewes on hand.

Maximum temperature, 70°; minimum, -4°; precipitation, 0.41 inch; a trace or more on 16 days, highest in 24 hours 0.11 inch.

DICKINSON:

March weather was relatively mild as a whole. The ground was practically bare of snow at the beginning of the month and again for a week at the close. The storm on the 15th, which was so severe in northern and eas tern North Dakota and Minnesota and which resulted in the loss of 70 lives, was only moderately severe here because very little snow fell and there was little snow on the ground at the time. Maximum wind velocity at the airport was recorded at 50 miles per hour. At the station the 24-hour movement was only 310 miles on the 2-foot anemometer. The temperature fell to 7° below zero on the morning of the 16th and rose again during the day so that the only zero readings were on the mornings of the 16th and 17th. Temperatures rose during the last week to a maximum of 68° on the 30th.

Some field work including raking and burning of thistles was done during the last week, and plowing and disking was started on the rotations on March 31.

Snowfall during the winter has been light. During the five months November-March, precipitation averaged only about 60 percent of normal. Heavy September and October rainfall brings the 7-month total up to 5.68 inches, or 1.12 inches above normal for this period.

Maximum temperature, 68°; minimum, -7°; precipitation, 0.40 inch.

MANDAN:

The month of March was generally mild, characterized by two extremely wet snowfalls occuring on the 20th and 21st, totaling 6.2 inches of snow and 0.70 inch precipitation.

The maximum temperature range was from 10° on the 16th to 62° on the 29th and 30th. The minimum range for the month was from -4° on the 16th to 30° on the 9th.

The wind velocity for the month was about average, the highest being recorded on the 15th when the 24-hour average was 14.6 miles per hour, although the Weather Bureau reported via radio that the velocity reached 35 to 40 miles per hour between 5:30 and 7:00 that evening in this vicinity. Highways in the eastern part of the State were blocked by the storm.

The total precipitation for the month was 1.00 inch, with 10.8 inches of snow. The snowfall of 6.2 inches on the 20th-21st had completely disappeared by the end of the month, although the run-off was comparatively low due to the partly cloudy weather and low temperatures and the fields in this locality no doubt benefitted considerably by this moisture and should be in good condition for spring planting.

BELLE FOURCHE:

March was mostly cloudy and damp. Precipitation was recorded on 18 days, but the amounts were too small to be of material benefit. The total precipitation for the month was 0.68 inch, which is 0.10 inch less than the 33-year average. Temperatures were relatively uniform and no extremely cold or abnormally warm weather occurred, but the last few days were comparatively warm. The mean temperature for the month was 1° cooler than normal. The wind movement was less than usual, but strong to high winds prevailed on 5 days, 4 of them occurring consecutively. The most severe storm of the month was on March 15, when a high wind commenced blowing early in the evening and continued throughout the night, causing considerable soil blowing. Rapidly falling temperatures and some snow accompanied the wind.

The warm weather at the close of the month induced resumption of growth of winter grain and grasses. From present indications winter wheat and winter rye have survived with good stands. Crested wheatgrass, which remained brown all last season after the destructive hail on June 22, appears to be making normal recovery.

The ground has thawed to a depth of a little over 8 inches, but grain stubble land is too wet to permit plowing. Field work was limited to corrugating and duckfooting early in the month to control soil blowing.

Maximum temperature, 68°; minimum, 5°; precipitation 0.68 inch.

ARCHER:

On the whole the weather during March was mild without severe winds. The total precipitation was 1.15 inches. Field work started March 20, but the snowstorm which occurred during the night of March 21 stopped this work.

Winter wheat is in excellent condition, and soil moisture is sufficient for field work. Grasses are making good growth, and the buds of some of the trees are swelling. Livestock are in a thrifty condition. Lambing at the station is in progress.

Maximum temperature, 66°; minimum, -7°; precipitation 1.15 inches.

NORTH PLATTE:

The most of the precipitation for the month came in the form of a 3-inch snow the last part of the first week. The precipitation for the month was 0.21 inch below normal. Since October 1, the precipitation totals 4.0 inches, which is 0.15 inch above normal for this period. Above normal precipitation was recorded in October and December.

Because of the moisture the first part of March and below freezing minimum temperatures, field work was not started until the 20th. Early spring tillage operations have been completed, and the spring small grains have been seeded.

The winter wheat did not make much growth until the last two weeks of the month. Stands are quite spotted, and it will be necessary to seed spring wheat on a few plots. [illegible] There are good stands of wheat on plots that had any trash on the surface to catch snow and protect the plants at the time of the heavy freeze on November 11. The poorest stands are on the smooth fallow plots. There is very little live wheat on the two-year fallow plots. Several wheat fields in the surrounding area are abandoned and are reseeded to spring grain or will be planted to corn. It is reported in the county adjoining on the west that wheat

NORTH PLATTE, contd.:
is looking very good and little will be abandoned because of poor stands.

Maximum temperature, 67°; minimum, 13°; precipitation, 0.65 inch.

AKRON:

March produced more than the average precipitation, the amount being heavy over the last half of the month. Army cutworms made their appearance early in the month, and rotation plot and variety seeding was purposely delayed. Since March 20 it has been impossible to seed because of snow and wet soil. Rotation plots were made ready early in the month, and a chance was taken on seeding some increase plots of grain across the railroad.

The recent moisture has compensated for the delay in seeding in the estimation of local farmers. Weighing nursery grain and preparing variety and rotation grain supplies for seeding has occupied the work time.

Maximum temperature, 70°; minimum 6°; the monthly precipitation was 1.26 inches. The 33-year average is 0.83 inch.

COLBY:

March was unsettled, cool, mostly calm, and damp with considerable cloudy, snowy, misty, and foggy weather. The first day of the month was the warmest of the year up to then and the last day was the warmest to date, with one exception. There were no extremes of temperature. The mean temperature and wind velocity were appreciably below normal. It was, however, rather windy with some dust and soil blowing on the 14th and the night of the 18th. The precipitation was slightly above normal. Moisture was recorded on 13 days, ranging from a trace on 7 days to 0.48 inch on the 23rd. There were 3.8 inches of snow. It fell on 8 different days. There were 3 clear, 18 partly cloudy and 10 cloudy days.

Winter wheat made excellent growth during the month. Over this county as a whole it looks more promising than for several years at this time of year. It looks as though very few fields will have to be abandoned on account of winter killing. The plants which were not completely killed at the time of November freeze are greening up nicely. On many fields the growth is heavier than the moisture now in the soil will support for long.

On the DLA project the winter killing is not nearly so serious as it appeared to be before the wheat began greening up and making considerable growth toward the end of the month. All the fallow plots will have stands worth leaving for harvest. Most of them will have enough of a stand to keep down excessive weed growth. The corn stubble plots do not look very promising as they did not get a good start last fall and did not catch much snow. A number of the other cropped plots have very poor stands, also.

The spring small grain stubble plots were prepared for seeding on the 31st. Those which were not plowed were rod weeded to kill the numerous weeds which were beginning to come through in places. The ground was amply wet and worked up nicely. The surface of the bare plots was very loose and would blow readily. The thistles in stubble plots were very troublesome as they loosen very easily.

Maximum temperature, 75°; minimum, 12°; Precipitation, 1.00 inch; snowfall 3.8 inches. Precipitation, January 1 to March 31, 2.00 inch; 54-year a verage 1.77 inches.

HAYS:

The month of March was unusually quiet and seemingly mild, although the mean temperature was about 3.3° below normal. There were no zero temperatures and no disagreeable storms. On only two days, March 18 and 20, was there sufficient wind to raise dust into the air.

The rainfall was below normal but the sky continued cloudy or part cloudy the first half of the month during which time on 9 of 15 days light sprinkles or traces of precipitation occurred, not enough to count for much but sufficient to keep an already wet top soil too wet for tillage work. The top soil was very wet at the beginning of the month and remained wet. Only during the last week was the soil really dry enough for good tillage work.

The amount of damage to winter wheat by the November freeze has been a topic of much discussion since the freeze occurred. It now appears that some of the wheat not killed outright was badly damaged and has failed to recover, consequently more fields were seriously damaged than was at first believed. The amount of damage, which is now more apparent, ranges from almost a total loss of stand on a small number of fields to less than 5 percent damage on other fields. The wheat that survived best generally seems to be that which had sufficient top growth to hold a little snow which protected the plants more or less from the cold blast. On these fields the wheat is now making a rapid growth, as a matter of fact, some fear of late frost damage is entertained if late frosts occur. A number of fields were reseeded to wheat during the winter, and others have since been seeded to oats and barley. The surviving wheat in the fields that suffered considerable loss of stand is now making a good growth, but weeds are beginning to emerge and may be the cause of worry later on. Despite the damage caused by winter killing it is believed there is enough wheat remaining to produce at least a normal crop in this part of the State. The soil moisture condition is much better than it has been for several years, even though the moisture has not yet penetrated deep in the sub-soil.

On the dry-land project there was some loss of wheat by the freezes, but enough remains on all the plots to make a fair stand. In some places it is more or less streaked due to certain drill rows having been killed, but as a whole the wheat looks good.

Since the November freeze considerable fear has been entertained regarding damage to the trees in this part of the State. It now seems that that fear was well grounded. The superintendent believes that our large cherry orchard on the terraced land is a complete loss and plans are being made to remove the trees. Buds on many other kinds of trees are slow, and it is believed many of the trees are dead as a result of the freeze.

The seeding of barley, oats, spring wheat, and peas was completed March 21. Field work since that time has consisted largely of staking and trimming wheat plots.

Maximum temperature, 76°; minimum, 15°; precipitation 0.58 inch, including 5.3 inches of snow.

GARDEN CITY:

Rainfall for the month was 0.58 inch, the average is 0.79 inch. The total for the first three months of the year is 2.58 inches, the average for the same period is 1.74 inches. Temperatures and wind velocity were below normal. There was dust in the air on four days, but little of this was due to local blowing.

GARDEN CITY, contd.:

The wheat is in good condition and is making growth. Some of the plots which had poor stands last fall are up now to fair to good stands. Some winterkilling occurred, but in general this should not be serious if weeds do not come in and gain an upper-hand.

Sorghum threshing was finally completed, but the yields were generally low considering the above average rainfall which was received last year. Spring small grains, that is, spring wheat, barley, oats and flax, were seeded in a moist seedbed and should come up to a good stand.

Station visitors were E. H. Coles, Superintendent of Colby station; Kermit Engle, County Agent of Kearney County; and, Dr. J. W. Lumb, A. L. Clapp, and C. O. Grandfield of Kansas State College.

Maximum temperature, 73°; minimum, 12°; precipitation, 0.58 inch.

TUCUMCARI:

Precipitation of 2.32 inches, nearly all in the form of rain was the third highest ever recorded here in March and the highest since 1919. Precipitation to the close of the month totals 3.5 inches compared with a normal of 1.3 inches for this three-month period. Wind movement was normal, with only two or three days of soil movement. Temperatures were far below normal.

Ranges and cropland are well supplied with moisture to a depth of at least 4 feet. Livestock wintered well, and with good grass assured it seems apparent ranchers may expect a favorable year.

Early wheat fields on the caprock south of Tucumcari are generally much improved in appearance since the heavy rains of ten days ago. Many of these fields are heavily infested with the pale western cutworm, however, and it is uncertain just how severe the damage will be. With continued moisture, the crop may withstand heavy attack, but it is apparent many fields will suffer much reduction in yield.

Late wheat has been badly injured by soil blowing and many fields have been listed. Cutworms are extremely numerous on many of the fields, and it appears evident the population is heavy enough to completely ruin many fields which have thus far withstood wind damage fairly well.

On April 1 Messrs. C. M. Packard, in charge of Cereal and Forage Insect Investigations, John Landrum, and H. H. Russell, all of the Bureau of Entomology and Plant Quarantine, made an extended trip through the wheat growing section. Mr. Packard, at the completion of the trip, stated that Mr. Russell would be assigned the next few months to cutworm and mite studies in eastern New Mexico and part of the Texas panhandle, with headquarters at Amarillo, Texas.

Station work has consisted of the usual spring pruning, tree and shrub planting, and early cultural work. Max., 80; min. 20; precip. 2.32

DALHART:

March weather gave a wide range of climatic factors.

The first 20 days of the month were just about as disagreeable as ever comes. During this period there were 13 days with soil movement, and except on 4 either the dust or erosion was plenty bad. Three of these 9 bad days could be classed as severe, most of the other 6 were plenty bad. Again, this month furnished one of those times when soil blowing could come from any direction of the compass. Wheat, where there is wheat, was punished severely during this period. Small seedlings were just about completely whipped out; plants with some size were able to stand the soil punishment to a fair degree. Winter wheat and rye on the station can now be classed as failures.

DALHART, contd.:

Starting on the 22d and continuing for five days there were a series of intermittent showers, snow, sleet, and rain until a total of 2.09 inches was received. Like the November 1940 precipitation, this moisture was nearly 100 percent absorbed by the soil. While soil samples have not been taken since this precipitation, one is safe in saying that the soil moisture is now well into the sixth foot. The oats plots are just now showing excellent stands since this rainfall. Sweetclover plants are only now starting to emerge.

The fall and winter precipitation (October-March) totals 7.01 inches. This is 3.11 inches more than the average for this 6-month period, and it is the greatest precipitation for this period since the winter of 1930-31. In only four other years has the precipitation been as great.

The minimum temperatures for the month averaged 29° which is near the 33-year average, while the maximum averaged 53°, or 6 below the average. The monthly wind velocity of 8.6 m.p.h. exceeded the average by .3 m.p.h. This was the windiest March since 1937.

Maximum temperature, 79°; minimum, 18°; precipitation 2.18 inches in eight rains. This is the wettest March since 1929. The average precipitation for March is 0.73 inch.

BIG SPRING:

Weather conditions during the month of March were unusual in many respects. Minimum temperatures were above normal with only a few days below freezing, and then only slightly below. Fruit blossoms that were out were thinned considerably, but there appears to be enough remaining to insure a fair crop if later freezes do not damage them further. Wind velocity was rather low during the month, except on two occasions when it reached soil-moving proportions. One of these started at sundown, which is quite unusual for this section, and blew all night.

The refreshing feature of the month was the precipitation; 3.14 inches was received as compared with a normal of 0.90 inch. This total included 0.68 inch from a 6-inch snow on the 18th; the remainder was from four rains in one week. The rainfall this month was the highest recorded for March since 1900 when records were first kept in town.

Early weeds and grass are making good growth on the ranges, which is very pleasing to the ranchers, as they now can stop supplemental feeding. Station wheat plots are making a rapid growth and are presenting a rich green color.

Station work has consisted of hand threshing and treating bagged sorghum variety seed, threshing and grinding milo for the cattle feeding experiments, pruning grapes, orchard, other trees and shrubs. A number of evergreen trees were planted, and replacements were made in the orchard and shrubbery block.

Station visitors included E. W. Johnson of the Woodward station.

Maximum temperature, 79°; minimum, 27°; precipitation, 3.14 inches.

LAWTON:

Disagreeably cold, dry weather during March retarded vegetative growth of all kinds. Native grasses and legumes have grown very slowly. Growth of fall-seeded oats and barley appeared to be about normal, but the growth of spring-seeded varieties has been very backward. A good growth of wheat was made during the last ten days of the month, averaging nearly 1¼ inches during the last seven days.

Sweetclover and alfalfa, seeded March 20, are emerging nicely at the present time. Corn planting on the rotation plots has been delayed because of the subnormal temperatures, the soil temperature averaging about 10° lower than it did at this time last year.

Spring plowing on rotation plots was completed at the close of the month. Fall plowed land has been disked to break up the hard crust that formed and to check weed growth. Basin listed land that will be planted to row crops of cotton and sorghums is also being leveled.

The mean monthly temperature for March was 6.3° below the long time average. The monthly precipitation of 0.34 inch was 1.27 inches below the 65-year average.

Examination of 50, 1/5 sq. ft. samples of bunch grass in 25 different points in Comanche County in March showed a total of 7,145 live and 60 dead chinch bugs, a mortality of only 0.83 percent. The mortality of bugs hibernating in sorghum stubble was 3.89 percent. This is the lowest percentage of winter mortality in both bunch grass and sorghum stubble for any time in the past five years.

Reports of Green bug infestations have come in from three southwestern counties within the last day or two. These infestations as observed appear to be confined to volunteer fields of oats. Infestations occurring this late in the season are not expected to produce extensive damage.

WOODWARD:

March was relatively cool, the mean temperature being 5° below normal, however, the actual minimum was not lower than 18°. Much cloudiness also prevailed, attended by frequent precipitation amounting to 1.57 inches, and as a result very little field work could be accomplished. Wind movement was light for this season of the year except on the 2nd and 29th when sporadic soil blowing occurred.

During the winter from November through March, precipitation amounted to 9.92 inches being very well distributed with no appreciable run-off, and spring soil moisture conditions are now the best in recent years. The normal rainfall for these months is 4.97 inches. Snowfall totalling 14.4 inches came mostly on unfrozen soil and the ground was not covered for any extended period. Temperatures varied from 76° to 6°, the minimum occurring early in November, caused some injury to non-hardy winter grains and other plants.

Winter wheat in the DLA and Cereal projects grew slowly and tillered freely under the influence of cool weather. Stands in general are excellent except in sorghum and corn stubble where uniformity is lacking. Spring-sown small grains have emerged with satisfactory stands. Field work included seed bed preparation for the dryland and irrigated vegetable gardens and other miscellaneous areas.

Because of favorable soil moisture, shipments of windbreak and ornamental nursery materials for cooperative experimental plantings have been especially heavy. Lining out new nursery stock and propagation of cuttings in the greenhouse are in progress. Grape vineyards have been pruned, tomato plants potted, and early garden vegetables sown.

WOODWARD, contd.:

Fencing operations at the Range Unit included stretching barbed wire, surveying permanent and temporary enclosures in different pastures, and establishing borders of the revegetation areas. At station Headquarters, routine early seeding of grasses and other forages has been completed. A number of improved selections of various native and introduced grasses started in the greenhouse have been transplanted in the field.

Other activities chiefly involved rocking and surfacing the pump-house driveway, treating increase sorghum seed for distribution, and cultivating winter wheat in windbreaks and vineyards. A small but continuous flow of water into the main reservoir raised the level to 4.4 feet at the end of the month as compared with 7.3 feet on this date last year. Full reservoir is approximately 20 feet. The rather heavy winter rainfall without appreciable surface run-off apparently has improved springs in the drainage area, and the outlook for an adequate supply of water for irrigation should be at least as promising as that of a year ago.

Maximum temperature, 76°; minimum, 18°; precipitation, 1.57 inches; snowfall, 3.3 inches.

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NOTE

This news letter will be followed by one for the period April 1 - 12, after which weekly news letters will be resumed.

U.S.D.A. Circular 564, Dry Land Crops at the Dalhart (Texas) Field Station, by O. R. Mathews and B. F. Barnes; and Farmers' Bulletin 1522, revised, The Home Fruit Garden on the Northern Great Plains, by W. P. Baird have been received from the printer.

A 20-page mimeographed paper entitled Methods of Disposal of Crop Residues for Growing Wheat after Fallow in eastern Oregon, by D. E. Stephens, G. A. Mitchell, M. M. Oveson, and Joseph Belanger was released April 1.